

## ABSTRACT

An LED lamp for mounting to an existing fluorescent lamp fixture having a ballast assembly including ballast opposed electrical contacts, comprising a tubular wall generally circular in cross-section and having tubular wall ends with one or more LEDs positioned within the tubular wall between the tubular wall ends. An electrical circuit provides electrical power from the ballast assembly to the LED(s). The electrical circuit includes at least one metal substrate circuit board and means for electrically connecting the electrical circuit with the ballast assembly. The electrical circuit includes an LED electrical circuit including opposed electrical contacts. Each metal substrate circuit board supports and holds the one or more LEDs and the LED electrical circuit. Each metal substrate circuit board is positioned within the tubular wall between the tubular wall ends. At least one electrical string is positioned within the tubular wall and generally extends between the tubular wall ends. One or more LEDs are in electrical connection with at least one electrical string and are positioned to emit light through the tubular wall. Means for suppressing ballast voltage is included. The metal substrate circuit board includes opposed means for connecting the metal substrate circuit board to the tubular wall ends, which include means for mounting the means for connecting, and the one or more metal substrate circuit boards. The opposed means for connecting the one or more metal substrate circuit boards to the tubular wall ends includes each metal substrate circuit board having opposed tenon connecting ends, and the means for mounting includes each of the tubular wall ends defining a mounting slot with the opposed tenon connecting ends being positioned in the mounting slots. Two or more metal substrate circuit boards each mounting LEDs can be mounted in the LED lamp.